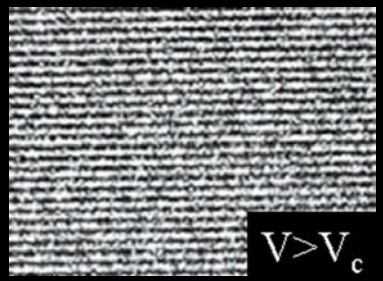
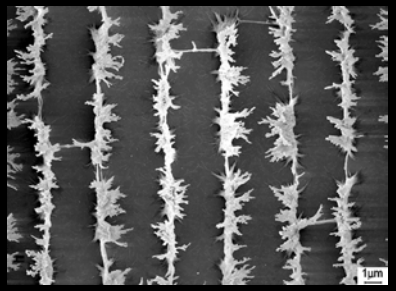
μ-Structured Polymer Networks

1-D OPM Image



SEM Image



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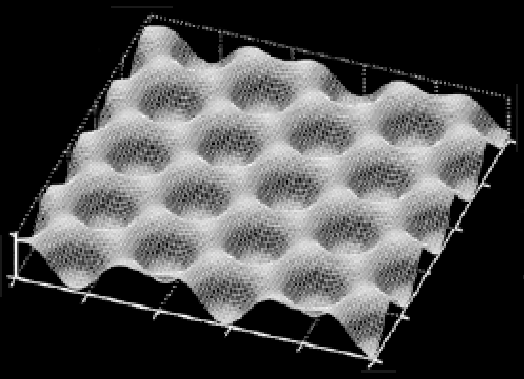
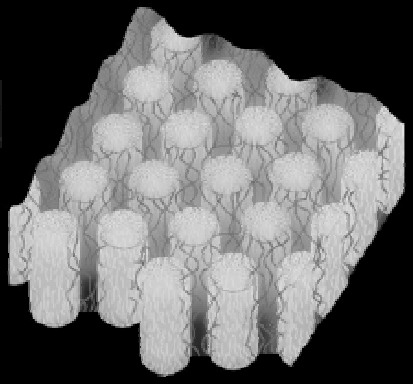
2-D Model

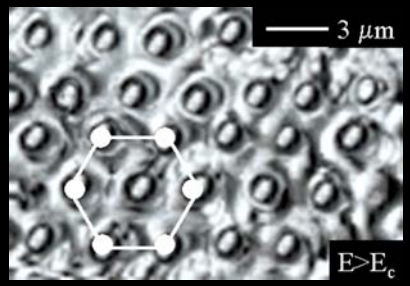


2-D Schematic



- Creating 1- and 2-dimensional polymer structures dispersed in liquid crystal.
- These structures have potential for electrically switchable, reverse-mode, polarization selective and non-selective diffractive optical elements.
- Using a simple phenomenological model to describe our diffraction measurements in conjunction with microscopic studies, we are able to estimate the structured polymer wall thickness as a function of monomer concentration.

2-D OPM Imagel



2-D Diffraction Pattern

CAREER DMR 9875427

Education Programs




- Community outreach in elementary and middle schools in RI and CT using optics, liquid crystal and nanoscience modules.
- K-8 modules that combine science and language (chromaticity diagrams) & science and art (polarization art).
- Participated in after school science programs.
- Developed a basic optics curriculum involving a series of simple lab activities for teachers to use in-class with easy to obtain household materials.
- Offered a 1 week optics intense course for junior high and early high school students (offered by PhD students).